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April 11, 2006

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**BY EMAIL AND BY US MAIL**

Mr. Bob Fletcher  
California Air Resources Board  
Post Office Box 2815  
Sacramento, CA 95812

**Re: BHP Billiton Mitigation Proposal**

Dear Bob:

Thank for you meeting with Renee Klimczak and me in late March. We appreciated being able to discuss with you the status of BHP Billiton LNG International's ("BHP's") efforts to bring the Cabrillo Port project (the "Terminal") to fruition. As you acknowledged, bringing a high quality gas supply into Southern California will be key to continued improvement in air quality in the region. Since that meeting, BHP has been able to obtain better information about the tug engine we discussed and has also contracted for a significant reduction in marine NOx (and diesel PM) emissions. This letter is to update you on BHP's efforts and to formally propose a mitigation strategy.

BHP has taken significant steps to minimize emissions from the vessels that will be associated with the Terminal. BHP anticipates that it will utilize at least eight carriers to transport LNG across the Pacific Ocean to the project. Two tugs and one crew/supply boat will service the project locally. If these vessels were to be fueled on diesel, they would emit approximately 664 tons per year of NOx in Federal waters. In order to mitigate those emissions BHP is committing to burn natural gas in all of its vessel engines while in Federal waters. This commitment reduces NOx emissions in Federal waters alone by over 500 tons per year, i.e., to 163 tons per year.

In order to find additional means of mitigating the vessel emissions, BHP turned to its engineering team. BHP's engineers recognized that the best way to mitigate the vessel emissions was to seek out better engines that would further decrease NOx emissions. The emissions in the application were based on standard gas burning engines. However, BHP's engineers believed that by working with an emissions conscious engine manufacturer they might be able to obtain engines with even lower emissions. This effort led BHP to Wartsila, a Finnish company that assisted the company in identifying engines with significantly lower emissions. After a



Mr. Bob Fletcher  
April 11, 2006  
Page 2

substantial investment of time and money, BHP has now been able to obtain a commitment from Wartsila to sell it natural gas fired engines suitable for BHP's tugs (the source of roughly 60 percent of the vessel NOx emissions) that will have substantially lower emissions than previously thought possible.

Attached to this letter are the specifications that Wartsila generated for the engines that it believes are best suited to BHP's tugs and that are capable of dramatically lower emissions. Specifically, Wartsila has recommended use of 32DF engines for the tugs—engines that they are willing to guarantee will emit 1.3 g/kW-hr or less. With the engine configuration/designs identified by Wartsila and their added performance commitments, BHP will be able to substantially reduce its vessel in Federal waters NOx emissions from 163 tons per year to 96.7 tons per year. The change in tug emissions is attributable solely to the reduced emissions rate; no changes were made to the tugs' operating scenario when calculating the new emissions levels.

Before BHP commits to proceed with the Wartsila engines (or equivalent) for the Terminal's tugs, the company needs a formal commitment from CARB that this is adequate mitigation for the vessels in Federal waters. If these engines are employed, BHP will have taken the NOx emissions in Federal waters from a potential 664 tons per year with diesel to 96.7 tons per year. The remaining emissions are low and modeling shows that there is no significant impact onshore. If CARB accepts the more stringent engine performance requirements as adequate mitigation, then BHP is willing to commit to engines in its tugs with 1.3 g/kW-hr NOx emissions.

We also discussed BHP's efforts to mitigate NOx emissions from the stationary source (i.e., the Floating Storage and Regasification Unit ("FSRU") and vessels in District waters). As we discussed, BHP committed to mitigate the emissions from the stationary source. Since we met, BHP has succeeded in contracting with a long haul barge hauling operation to replace the engines and upgrade the hull design of one of its tugs that hauls barges between the Port of Richmond and the Port of Los Angeles/Port of Long Beach. The tug's route is entirely within California Coastal Waters. BHP is very excited about this development as it anticipates that the annual NOx emission reductions attributable to this project are approximately 169 tons per year. By comparison, the stationary source NOx emissions are estimated to be 66.7 tons per year. In fact, the combined annual NOx emissions attributable to the vessels in Federal waters and the stationary source (163.3 tons per year) are less than the projected annual NOx emission reductions attributable to the tug repowering (168.8 tons per year). We have included for your review a copy of the contract between BHP and the tug owner (with financial information redacted) documenting BHP's exclusive right to these emission reductions. We anticipate that



Mr. Bob Fletcher  
April 11, 2006  
Page 3

our air permit will include a requirement that BHP comply with the contract, thus making it a federally enforceable requirement.

BHP does not believe that any mitigation is required under CEQA beyond the following measures:

1. Use of natural gas as the fuel for all Terminal vessels (Carriers, tugs and crew boat) operating in Federal or District waters.
2. Use of engines in tugs with manufacturer specifications for NOx of 1.3 g/kW-hr.
3. Execute and implement the Sause Brothers contract (attached).

We note that by executing and implementing the enclosed tug repowering contract BHP anticipates NOx emission reductions in excess of the Terminal's direct and indirect emissions.

Please let me know if you have any questions after reviewing this letter or the Wartsila specification sheet. If CARB agrees that the mitigation measures outlined above meet BHP's mitigation obligation, then BHP will commit to these measures. Please call me as soon as you have had an opportunity to consider this letter so that we can discuss how to proceed. As you know the EIR comment period closes on April 28<sup>th</sup>. We look forward to resolution of this issue.

Sincerely,

Thomas R. Wood

cc: Renee Klimczak  
Rick Abel  
Dwight Sanders

Attachments: Sause Brothers contract  
Wartsila 32DF Specification Sheet

## VESSEL CONVERSION AGREEMENT

This Vessel Conversion Agreement (this "Agreement"), is dated this \_\_\_\_ day of April 2006 and is entered into by and between BHP Billiton LNG International, Inc., a Delaware Corporation, whose address is 300 Esplanade Drive; Suite 1800; Oxnard, California 93036 ("BHP"), and Sause Brothers, Inc., a Oregon Corporation, whose address is 155 East Market Avenue; Coos Bay, Oregon 97420 ("Sause").

### RECITALS

A. Sause owns and operates the tug Kliyham which currently hauls petroleum cargo barges from the Port of Richmond to the Port of Los Angeles/Port of Long Beach and elsewhere along the Southern California coast. The tug Kliyham is currently equipped with two GM Electromotive Diesel ("EMD") 16-645 propulsion and two Detroit Diesel 6-71 auxiliary generator engines. These engines emit various pollutants from the combustion of diesel fuel.

B. BHP is proposing to construct a liquefied natural gas terminal off the coast of Ventura County, California ("Cabrillo Port"). Cabrillo Port will emit various pollutants and will require an air quality permit issued by the U.S. Environmental Protection Agency ("EPA"). As a condition to issuing a permit for Cabrillo Port, EPA has requested that BHP mitigate a portion of these emissions.

C. By replacing the existing diesel engines in the tug Kliyham with more modern EMD 8-710 engines and by then using the tug Kliyham for the towing of petroleum barges along the California coast, the diesel emissions from operation of that line would be substantially reduced. SOMAR, the shipyard Sause intends to use for this project has provided a \$ [REDACTED] estimate for the purchase and installation of EMD 8-710 engines, gears, drive train, generators and ancillary equipment.

D. In order to create emission reductions to assist in permitting for Cabrillo Port and for other purposes, the parties desire to replace the engines in the tug Kliyham with new engines that will produce lower emissions while towing barges between the Port of Richmond and the Port of Los Angeles/Port of Long Beach.

### TERMS OF AGREEMENT

1. **Payment.** BHP shall deliver \$ [REDACTED] to Sause within 30 days of successful completion of the due diligence process identified in paragraph 2. BHP shall deliver \$ [REDACTED] to a licensed escrow agent acceptable to both parties no later than twenty-four months from the date of this Agreement unless the Agreement is terminated consistent with paragraph 2 prior to that time. Prior to delivery of the funds, BHP shall deliver escrow instructions as described below to the escrow agent directing them to make funds available to Sause for purposes of the engine replacement described in paragraph 3. The escrow agent shall [REDACTED]

[REDACTED]

[REDACTED] The escrow instructions shall direct the escrow agent to deliver any unpaid funds and interest to BHP upon receipt of the notice of replacement required under paragraph 3(b) of this Agreement or twelve months after the escrow account is funded, whichever is earlier. The costs of the escrow and any applicable charges and excise taxes in connection with the escrow will be borne by BHP.

**2. Termination.** This Agreement may be terminated by BHP prior to expiration of the twenty-four month period upon written notice of termination to Sause. BHP may terminate this Agreement and all obligations thereunder within 120 days of the date of this Agreement if the information provided to or obtained by BHP pursuant to paragraph 7 of this Agreement does not demonstrate to the satisfaction of the U.S. EPA, California Air Resource Board, the Ventura County Air Pollution Control District or any other governmental authority (collectively, the "Governmental Authorities") that the engine replacement described in paragraph 3 will result in emissions reductions consistent with those described in Attachment A. If BHP provides written notice of termination for reasons other than those stated in the preceding sentence, after issuance of the Cabrillo Port air permit and Deepwater Ports Act license but prior to twenty-four months from the date of this Agreement, BHP shall remit payment to Sause in the amount of \$ [REDACTED] and all rights and obligations of BHP and Sause hereunder terminate without further liability of either party to the other.

**3. Engine Replacement.** No later than twelve months after BHP funds the escrow account pursuant to paragraph 1 above, Sause will: (a) replace the engines (propulsion and auxiliary generator) on the tug Kliyham with engines meeting all EPA Tier 2 emission requirements for marine engines as identified in Attachment B; (b) provide written certification and other documentation of such replacements to BHP and EPA in a form reasonably acceptable to BHP and EPA. Sause shall be solely responsible for operating and maintaining the replacement engines in the tug Kliyham.

**4. Mitigation Credits.** BHP shall have the sole and exclusive right to all emission reduction benefits under the rules and programs of any Governmental Authority or regulatory program concerning air quality ("Mitigation Credits") resulting from or relating to conversion of the tug Kliyham as described in this Agreement. Sause will not apply for any grant or loan to subsidize any portion of the engine replacement that would limit in any way BHP's exclusive right to the Mitigation Credits. BHP may freely assign or otherwise transfer all or any portion of the Mitigation Credits to any other person and shall be solely entitled to all compensation or other consideration for such assignment or transfer. Sause shall not claim any Mitigation Credits in connection with the engine replacements, except for the benefit of and at the direction of BHP. Sause shall prepare and maintain all records requested or required by EPA or any other Governmental Authority to document engine replacement under this Agreement and the maintenance or operation of the new engines and shall submit such records to BHP or any Governmental Authority upon request.

**5. Agreement Term.** The term of this Agreement is seventeen years from the date the tug Kliyham is returned to service. Sause agrees to maintain the tug Kliyham in service along the Southern California coast for the term of this Agreement. Sause may substitute another vessel or vessels for the Kliyham and remain in compliance with this Agreement so long as the replacement vessel(s) emit oxides of nitrogen at levels equal to or less than those of the Kliyham

and simultaneous written notice is provided to BHP. If Sause ceases usage of the Kliyham (or a substitute) along the Southern California coast, then Sause shall pay restitution to BHP. If Sause's three-year average usage of the Kliyham along the Southern California coast is less than seventy-five percent from the projected usage, then Sause shall pay restitution to BHP. Restitution shall be calculated as stated in Attachment C. As used in this paragraph and Attachment C, the term "projected usage" shall mean the future annual usage level utilized to calculate the Mitigation Credits and the term "ceases usage" means that the annual usage of the Kliyham (or substitute) is less than fifty percent of projected usage. Sause shall remit any Restitution due BHP no later than February 15 of the year following the calendar year in which Restitution was triggered. Upon payment of restitution consistent with this Agreement, all rights and obligations of BHP and Sause hereunder terminate without further liability of either party to the other.

**6. Confidentiality.** Sause and BHP will maintain the financial terms of this Agreement as Confidential Information. Each party shall maintain the Confidential Information as secret and confidential and shall not disclose the Confidential Information to any other person without the consent of the other party. Notwithstanding the foregoing, either party may provide a copy of this Agreement and disclose other Confidential Information to interested state or federal agencies provided that the party requests that such agencies maintain the confidentiality of the Confidential Information consistent with applicable statutes and regulations. The terms of this paragraph 6 shall survive termination of this Agreement.

**7. Further Documentation and Cooperation.** The parties acknowledge that additional documentation and other actions may be necessary to document and transfer to BHP all Mitigation Credits and the parties will cooperate in preparing such documents and performing such additional actions. Sause shall execute such documents and take such additional action as BHP or the Governmental Authorities reasonably may request or require to document the Mitigation Credits or to otherwise fulfill the intent of this Agreement.

**8. General Terms.**

a. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. Neither party shall assign this Agreement to any other person without the written consent of the other party, which consent shall not be unreasonably withheld.

b. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

c. This Agreement supersedes and replaces all written and oral agreements previously made or existing between the parties and states the entire agreement of the parties. This Agreement and any of its terms may only be changed or waived by a written instrument signed by the party against whom enforcement of the change or waiver is sought.

d. Notices under this Agreement shall be in writing and shall be effective when actually delivered. If mailed, a notice shall be deemed effective on the second day

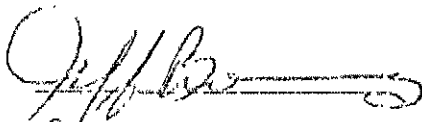
after deposited as registered or certified mail, postage prepaid, directed to the other party at the address shown above. Either party may change its address for notices by at least 15 days advance notice to the other.

**BHP Billiton LNG International, Inc.**

By: \_\_\_\_\_

Title: \_\_\_\_\_

**Sause Brothers, Inc.**

By: \_\_\_\_\_

Title: Southern CA Area U.P.

**Attachment A**  
Anticipated Emissions Reductions

Current Operation: Sause Brothers operates the tug Kliyham hauling the petroleum barge Sunset Bay between the Port of Richmond and the Port of Los Angeles/Port of Long Beach. This is a twin engine vessel with 30 year plus GM Electromotive 16-645, 1,950 h.p. (each), diesel engines. The vessel also has same age auxiliary generator sets that are DDC 6-71 models.

This analysis estimates the anticipated emission reductions from repowering the Kliyham with Tier II compliant EMD 8-710 engines, 2,000 h.p. each @ 900 rpm.

Emission Reduction Calculations

***Main Engines***

Baseline engines:

NOx = 14 gms/bhp-hr (Moyer data)

PM = 0.53 gms/bhp-hr

Fuel burn = 800,000 gallons/yr

NOx corrected for California fuel =  $0.94 \times 14 = 13.16$  gms/bhp-hr

PM corrected for California fuel =  $0.8 \times 0.53 = 0.424$  gms/bhp-hr

Repower engines:

NOx = 4.87 gms/bhp-hr (EMD data)

PM = 0.107 gms/bhp-hr (EMD data)

NOx corrected for California fuel =  $0.87 \times 4.87 = 4.24$  gms/bhp-hr

PM corrected for California fuel =  $0.9 \times 0.107 = 0.0963$  gms/bhp-hr

Fuel consumption factor = 20.8 bhp-hr/gal (Category II marine engine)

NOx reductions =  $(13.16 - 4.24)$  gms/bhp-hr  $\times$  20.8 bhp-hr/gal  $\times$  800,000 gal/yr  $\times$  1/907,200 tons/gm

= 163.61 tons/yr

PM reductions =  $(0.424 - 0.0963)$  gms/bhp-hr  $\times$  20.8 bhp-hr/gal  $\times$  800,000 gal/yr  $\times$  1/907,200 tons/gm

= 6.01 tons/yr



## Generator Engines

Baseline engines:

NOx = 11 gms/bhp-hr (Moyer off-road data)

PM = 0.55 gms/bhp-hr (Moyer off-road data)

Hours/yr = 3,000

H.P. = 165

NOx corrected for California fuel =  $0.94 \times 11.0 = 10.34$  gms/bhp-hr

PM corrected for California fuel =  $0.8 \times 0.55 = 0.44$  gms/bhp-hr

Repower engines:

NOx = 4.66 gms/bhp-hr (Tier II data)

PM = 0.22 gms/bhp-hr (Tier II data)

NOx corrected for California fuel =  $0.87 \times 4.66 = 4.05$  gms/bhp-hr

PM corrected for California fuel =  $0.9 \times 0.22 = 0.198$  gms/bhp-hr

NOx reductions =  $(10.34 - 4.05)$  gms/bhp-hr  $\times$  165 h.p.  $\times$  0.75  $\times$  3,000 hrs/yr  $\times$  2 # of engines  $\times$  1/907,200 tons/gm

= 4.66 tons/yr

PM reductions =  $(0.44 - 0.198)$  gms/bhp-hr  $\times$  165 h.p.  $\times$  0.75  $\times$  3,000 hrs/yr  $\times$  2 # of engines  $\times$  1/907,200 tons/gm

= 0.22 tons/yr

*Total Estimated Emission Reduction From Repowering Main Engines and Generator Engines:*

NOx reductions = 168.75 tons/yr

PM reductions = 7.99 tons/yr

**Attachment B**

<b>Emission Specifications</b>				
	Main Engines (2,000 BHP)		Generator Engines (165 BHP)	
	g/kW-hr	g/BHP-hr	g/kW-hr	g/BHP-hr
THC +NO <sub>x</sub>	6.53	4.87	6.25	4.66
PM	0.143	0.107	0.30	0.22

### **Attachment C**

Restitution shall be computed according to the following formula:


$$R = C_{Rep} \times M$$

R = Restitution payment due BHP

C<sub>Rep</sub> = Total amount paid to Sause from escrow account for Kliyham engine replacement pursuant to paragraph 1 of this Agreement

M = Multiplier as stated in following table:

Year Into Term of Agreement	Multiplier if Sause ceases usage of Kliyham along Southern California coast	Multiplier if Sause's 3-year average usage of Kliyham along Southern California coast is <75% of projected usage
1	1.0	NA
2	1.0	NA
3	1.0	0.8
4	0.85	0.7
5	0.7	0.5
6	0.4	0.4
7	0.25	0.25
8+	0	0

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Subtitle -	Product Wärtsilä 32DF	Made Appd.	14.04.1997 10.07.1998	JNd / Norrgård UÅd / Åstrand	Page 1 (1)	Document No 4V92A0587	Rev b
	Revised date: 06.04.2001		Changed by: JNd		Approved by: UÅd		D-message No.: 35114

## EXHAUST GAS EMISSION DATA

At ISO 3046 – 1:1995(E) standard reference conditions.<sup>1)</sup>  
Constant speed: 720 and 750 rpm and  $\text{NO}_x = 500 \text{ mg/m}^3_{\text{N}}$ .

Emissions	Unit	Load [%] 100	Load [%] 90	Load [%] 75	Load [%] 50
At 15% O <sub>2</sub>					
NO <sub>x</sub>	vol-ppm,dry	90	90	110	170
CO	vol-ppm,dry	210	210	230	270
THC (as CH <sub>4</sub> )	vol-ppm,wet	1210	1490	1650	2080
Typical measured O <sub>2</sub> concentration	vol-%, dry	11,39	11,47	11,75	12,48
Specific emissions					
NO <sub>x</sub> (as NO <sub>2</sub> )	g/kWh	1,3	1,3	1,6	2,7
CO	g/kWh	1,9	1,9	2,1	2,6
THC (as CH <sub>4</sub> )	g/kWh	6,5	8,0	9,0	12,0
Mass concentration					
NO <sub>x</sub> (as NO <sub>2</sub> )	mg/m <sup>3</sup> <sub>N</sub> at 5% O <sub>2</sub>	500	500	590	960
CO	mg/m <sup>3</sup> <sub>N</sub> at 5% O <sub>2</sub>	710	720	780	920
THC (as CH <sub>4</sub> )	mg/m <sup>3</sup> <sub>N</sub> at 5% O <sub>2</sub>	2300	2900	3200	4000
Specific emissions					
NO <sub>x</sub> (as NO <sub>2</sub> )	mg/MJ fuel	160	150	180	290
CO	mg/MJ fuel	220	230	240	280
THC (as CH <sub>4</sub> )	mg/MJ fuel	780	950	1050	1290

### Tolerances:

NO <sub>x</sub>	± 0 %
CO	± 15 %
THC	± 15 %

**NOTE 1.** The NMHC-emissions are highly dependent on used gas composition and is calculated case by case if needed

**NOTE 2.** Values given in m<sup>3</sup><sub>N</sub> is at 0 °C and 101.3 kPa.

<sup>1)</sup> Except for LT-water temperature, which is 30 °C for the Wärtsilä 32DF engine in gas operation.